

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 41

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STUART Z. URAM

Appeal No. 1998-0187
Application No. 08/247,518

ON BRIEF

Before CALVERT, FRANKFORT, and GONZALES, Administrative Patent Judges.

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 8 through 15, 28 through 32, 35 through 37, 39 and 40. Claims 41 and 42, the only other claims in the application, stand withdrawn from consideration under 37 CFR

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§ 1.142(b).

We AFFIRM-IN-PART.

The subject matter on appeal is directed to a process for making a ceramic cup having a body and handle and to a process for manufacturing an injection molded article having a concealed sprue. Claims 8 and 28 are illustrative of the subject matter on appeal and are reproduced below:

8. A process for making a ceramic cup having a body and a handle, comprising injection molding the body and the handle together in a single injection molding operation to form an integral, one-piece, unitary construction formed of ceramic and a binder thereof.

28. A process for manufacturing an injection molded article having a concealed sprue, comprising the steps of:

(A) injection molding a ceramic article having an outer surface defining a recess and a sprue terminating in the recess;

(B) molding a ceramic plug separate and distinct from the article, the plug having a first surface configured and dimensioned to conceal the sprue and a sidewall configured and dimensioned to substantially fill the recess;

(C) forming an article and plug assembly by inserting the plug into the recess with the sprue being covered by the plug first surface; and

(D) firing the article and the plug assembly to secure the article and the plug together.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Howatt	2,434,271	Jan. 13, 1948
Kliegel	2,583,951	Jan. 29, 1952

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Davis et al. (Davis)	3,889,071	Jun. 10, 1975
Nakamura et al. (Nakamura)	4,156,051	May 22, 1979
Sims		4,220,079
Sep. 2, 1980		
Matsuhisa et al. (Matsuhisa)	4,713,206	Dec. 15, 1987
Sterzel et al. (Sterzel)	4,908,172	Mar. 13, 1990

The appealed claims stand finally rejected under 35
U.S.C.

§ 103(a) on the following grounds:

- (1) Claims 8 through 10, 12 through 14, 39 and 40,
unpatentable over Matsuhisa or Sterzel in view of Sims and
Kliegel;
- (2) Claim 11, unpatentable over Matsuhisa or Sterzel in view
of Sims, Kliegel and Howatt; and
- (3) Claims 15, 28 through 32 and 35 through 37, unpatentable
over Nakamura in view of Davis.

The full text of the examiner's rejections and responses
to the arguments presented by the appellant appears in the
answer (Paper No. 35, mailed May 29, 1997), while the complete
statement of the appellant's arguments can be found in the

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main and Reply Briefs (Paper Nos. 34 and 37, filed February 19, 1997 and July 18, 1997, respectively).

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we have made the determinations which follow.

Rejection (1)

As a preliminary matter, we note that on pages 3 and 4 of the main brief, the appellant has indicated that claims 8-10 and 12-14 stand or fall together as one group. In accordance with 37 CFR § 1.192(c)(7), we select claim 8 as being representative.

Independent claim 8 is directed to a process for making a ceramic cup having a body and a handle, comprising injection molding the body and the handle together in a single injection molding operation to form an integral, one-piece, unitary

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construction formed of ceramic and a binder thereof. We are informed by the appellant's specification that "[c]ups made of ceramic materials (such as bone china or earthenware) have been made without handles by a variety of different procedures, including injection molding" and that "the prior art teaches the manufacture of ceramic cups by the separate manufacture of the body and the handle, and then the joining of the handle to the body in a cementing operating." See specification, p. 1. According to the appellant, it was also known in the art prior to his invention to make ceramic cups having a body and a handle as an integral, one-piece unitary construction by an isostatic compression molding technique. See id. at pp. 1 and 2 and U.S. Patent No. 4,713,204 to Jung, of record.

Claims 8 through 10, 12 through 14, 39 and 40 stand rejected under 35 U.S.C. § 103. The guidance provided by our reviewing court in evaluating the issue of obviousness of the invention in view of the teachings of the applied prior art is as follows: The initial burden of establishing a basis for denying patentability to a claimed invention rests upon the examiner. See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ

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785, 788 (Fed. Cir. 1984). The question under 35 U.S.C. § 103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. See Merck & Co., Inc. v. Biocraft Laboratories, Inc., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989), cert. denied, 493 U.S. 975 (1989) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). While there must be some suggestion or motivation for one of ordinary skill in the art to combine the teachings of references, it is not necessary that such be found within the four corners of the references themselves; a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference. See In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Further, in an obviousness assessment, skill is presumed on the part of the artisan, rather than the lack thereof. In re Sovish, 769 F.2d 738, 742, 226 USPQ 771, 774 (Fed. Cir. 1985). Insofar as the references themselves are concerned, we are bound to consider the disclosure of each for what it fairly teaches one of ordinary skill in the art, including not only

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the specific teachings, but also the inferences which one of ordinary skill in the art would reasonably have been expected to draw therefrom. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966); and In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

The examiner describes each of Matsuhisa and Sterzel as teaching a process of making a ceramic article of complicated shape by injection molding a mixture of ceramic material and a binder. Sims and Kliegel are cited merely to show cups having a body and a handle. The examiner also asserts that it was well known in the art prior to the appellant's invention to make cups with handles using ceramic material and a binder, an assertion that appellant has not challenged. It is the examiner's position that it would have been obvious to form a cup of the shape taught by Sims or Kliegel of ceramic material and a binder using the process of either Matsuhisa or Sterzel. See Answer, p. 5.

In applying the test for obviousness,¹ we reach the conclusion that it would have been obvious to one having ordinary skill in the art, from a combined assessment of the teachings of the applied prior art, to fabricate a ceramic cup having an integral body and handle, a conventional design as acknowledged by the appellant (Brief, p. 6) and as shown by Sims and Kliegel, using the injection molding process taught by Matsuhisa or Sterzel. We note that Sterzel teaches an injection molding process that avoids the formation of microcracks in the ceramic molding and "ensures the production of geometrically complicated moldings with high productivity" (col. 1, ll. 26-52). In addition, injection molding was well known in the art prior to the appellant's invention to be particularly suitable for molding difficult shapes and thin walls and was known to process certain cost advantages over other molding processes.² In our view, one of ordinary skill

¹ The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

² Myron L. Begeman et al., Manufacturing Processes, 277 (1963). (copy enclosed)

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in the art would have been motivated to manufacture a conventional ceramic cup with the typical handle by injection molding in order to obtain the known advantages of an injection molding process and would have had a reasonable expectation of success in doing so based on the particular suitability of injection molding for making objects having difficult shapes and thin walls.

Having determined that the prior art itself reasonably establishes a prima facie case of obviousness with respect to the subject matter of claim 8, we will now consider the evidence asserted to support the patentability of the claimed invention. To this end, the appellant has offered evidence in rebuttal to the prima facie case established by the examiner in the form of four declarations, one from the inventor, Stuart Z. Uram, two from Christopher Johnson, Group Manufacturing and Technical Director of Josiah Wedgwood & Sons Limited (hereinafter "Wedgwood"), and one from Malcolm G. McLaren, Professor in the Ceramics Department and Director of the Institute for Engineering Materials at Rutgers University

and the State University of New Jersey.³ In view of the presentation of such evidence, we must reweigh the entire merits of the matter of obviousness and hence consider all of the evidence of record anew (In re Piasecki, supra). We are also mindful that evidence of nonobviousness in any given case may be entitled to more or less weight, depending upon its nature and its relationship with the merits of the invention. Stratoflex Inc. v. Aeroquip Corp., 713 F.2d 1530, 1539, 218 USPQ 871, 879 (Fed. Cir. 1983)

The Uram declaration asserts (§ 9) that contrary to the conventional wisdom of the art, he has found that injection molded cups can be made cheaper than conventionally made cups, when one takes into consideration the advantages that result therefrom, namely, the number of injection molded cups which must be rejected for quality control purposes is greatly reduced and the injection molded process produces more uniform and standardized cups which permits what prior to the invention was a manual job of painting the cup to be automated. The Uram declaration further asserts (§ 10) that

³ A copy of these declarations appears in "Appendix 2" attached to the main brief.

injection molded cups are superior in appearance, uniformity and reliability to cups made by the conventional method.

The Johnson declarations disclose that Wedgwood has entered into a nonexclusive licence agreement with Certech, Inc. (hereinafter "Certech"),⁴ which agreement includes a commitment by Wedgwood to fund the development of "the process" for large scale manufacture. See declaration dated March 2, 1995, ¶ 5 and declaration dated November 14, 1995, ¶ 7. Johnson also states his belief that "[w]hen the Certech process is developed to the full commercial production stage" certain "potential" improvements will make it advantageous to adopt the Certech process over Wedgwood's traditional process. See declaration dated March 2, 1995, ¶ 8. The "potential" improvements identified include a reduction in the amount of skilled labor required to attach the handle and remove imperfections, improved yields, greater uniformity in cup size and less risk of handle defects. Id.

The McLaren declaration states his opinion that the "Certech process" is nonobvious as well as his belief that

⁴ According to the Main Brief (p. 1), Certech, Inc. is the assignee of the application on appeal.

cost saving benefits could be derived by reducing the amount of skilled labor required in the subsequent stages of cup production, namely, in attaching the handle, removing imperfections and decorating the fired product. See ¶¶ 9 and 19.

The appellant argues that the Uram and Johnson declarations establish the financial or commercial success of the claimed invention. However, our review of the declarations reveals that none of the declarations attest to any commercial sales of cups made by the method of claim 8. Rather, the appellant's financial success argument seems to be based on the license agreement between Wedgwood and Certech. See Main Brief, pp. 9, 10 and 12. We do not believe that evidence of a single license agreement establishes commercial success, particularly where no evidence of any commercial sales of the product made by the process defined in claim 8 has been presented and the licensee is obligated to pay only a minimum royalty. See the Uram declaration, at ¶ 11.

The appellant also argues that at the time of the appellant's invention the industry did not believe cups with handles could be economically manufactured by injection

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molding. See Main Brief, pp. 8, 10 and 11. Along this line, at page 3 of the Uram declaration, it is asserted that

. . . an injection molded cup can be and is cheaper than a conventionally made cup when one takes into consideration, as well as the strict cost of manufacture by the injection molding operation, the advantages that result from the injection molding operation relative to the conventional cup manufacture operation.

The economic advantages identified by Uram are a reduction in the number of rejected cups for quality control purposes and an enhanced uniformity permitting automated, rather than manual, painting of the cup. See Uram declaration, ¶ 9. However, the first Johnson declaration dated March 2, 1995, at ¶¶ 8 and 12, indicates that the claimed process had not yet been developed to the full commercial production stage and describes the cost savings benefits of the claimed invention as potential benefits. Also, in the second Johnson declaration dated November 14, 1995, at ¶ 5, the declarant states that "we are optimistic that we can produce our cups by the Certech method on a large scale commercial basis, with an increased precision and uniformity of size and shape, cup after cup" (emphasis supplied). Likewise, the McLaren declaration dated January

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25, 1996, at ¶ 9, refers to “. . . the cost saving benefits to be derived from permitting use of less skilled workers . . .” (emphasis supplied).

We have a number of problems with this evidence. First, each declaration simply expresses the declarant’s opinion that ceramic cups made on a commercial scale by the process defined in appealed claim 8 would be less expensive to mass produce than such cups produced by conventional methods. The opinions are not supported by any factual evidence or data demonstrating actual cost savings with the appellant’s claimed method over conventional methods. Affidavits and declarations fail in their purpose when they recite conclusions with few facts to buttress the conclusions. See In re Brandstadter, 484 F.2d 1395, 1406, 179 USPQ 286, 294 (CCPA 1973); In re Thompson, 545 F.2d 1290, 1295, 192 USPQ 275, 277-78 (CCPA 1976).

Second, the appellant has not established that the objective evidence of nonobviousness is commensurate in scope with the claimed invention. In other words, the showing of unexpected results must be reviewed to see if the results

occur over the entire claimed range. See In re Clemens, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980). In this instance, the objective evidence of nonobviousness is solely directed to the unexpected results obtained by the manufacture of cups on a commercial scale. It is our view, however, that claim 8 is not limited to the production of cups on a commercial scale, but includes within its scope the manufacture of one or a small number of cups. We do not find and the appellant has not directed our attention to any evidence in the record establishing that the manufacture of a few cups by the process defined in claim 8 has any unexpected cost benefit over the manufacture of a like number of cups by the conventional process. For the foregoing reasons, the appellant's evidence of unexpected cost benefits can be accorded little weight.

As to the opinions⁵ in the above-noted declarations that cups made by the claimed process are superior in appearance,

⁵ As with the assertion of unexpected cost benefits, the statements regarding unexpected improvements in the quality of the cups produced by the claimed process are unsupported by any factual data either in the specification or in the declarations comparing cups produced by the claimed process to cups produced by any prior art process.

uniformity and reliability to cups made by the conventional method, we agree with the examiner (Answer, p. 15) that those results were expected at the time of the appellant's invention and, therefore, are not persuasive. Certainly, one of ordinary skill in the art at the time the appellant made his invention would have expected that a cup having a body and handle formed together in a single molding operation, whether plastic or ceramic, would be more homogeneous than a cup having a body and handle joined by adhesive or slip.⁶ Likewise, one of ordinary skill in the art at the time the appellant made his invention would have expected that two cups molded by machine using identical dies would be more uniform in appearance than two cups made by hand. This conclusion is based simply on common knowledge and common sense of the

⁶ According to the Johnson declaration dated March 2, 1995, at ¶ 4, Wedgwood's conventional process for making a ceramic cup comprises forming the body and handle separately from a ceramic mix by mechanical shaping means and by hand, drying the green ware and attaching the handle to the body using slip (or liquid clay).

person of ordinary skill in the art.⁷ See In re Bozek, supra.

For the foregoing reasons, the rebuttal evidence is given little weight. Thus, it is our conclusion that, on balance, the evidence and argument provided by the appellant fails to outweigh the evidence of obviousness established by the prior art. This being the case, we will sustain the examiner's rejection of claim 8. Since claims 9, 10 and 12 through 14 stand or fall with independent claim 8, supra, it follows that we will also sustain the standing 35 U.S.C. § 103(a) rejection of those claims.

Claims 39 and 40 depend from claim 8. Claim 39 adds that the injection molding step is characterized by the production of an essentially homogeneous construction. Claim 40 includes the same language as claim 39 and adds that the homogeneous

⁷ On pages 14 and 15 of the Answer, the examiner refers to a non-applied publication and three non-applied patents to Jung, Fanelli et al. and Ando et al. as supporting his position that the advantages identified in the declarations are not unexpected. For the reasons set forth in the case of In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970), we have not considered these patents or the examiner's comments with respect thereto in reaching our decision on this appeal.

construction is devoid of any region of discontinuity intermediate the body and handle. Our understanding of the examiner's position is that a homogeneous construction is an inherent property of articles produced by injection molding. See Answer, p. 14.

The appellant argues that claims 39 and 40 recite features which would not be present if the cup were made by a different process (see Main Brief, pp. 4 and 23), but that is not the issue.

We view as reasonable the examiner's determination that articles made by injection molding would have been expected by persons of ordinary skill to have a homogeneous construction. The appellant has not presented any argument or evidence to convince us otherwise. Thus, we will also sustain the standing

35 U.S.C. § 103(a) rejection of claims 39 and 40.

Rejection (2)

We note that appellant has not argued the merits of the rejection of claim 11 apart from the rejection of claim 8, the independent claim upon which claim 11 depends. Therefore,

claim 11 also stands or falls with claim 8. In re Nielson, supra. Accordingly, we will also sustain the standing 35 U.S.C. § 103(a) rejection of claim 11 as unpatentable over Matsuhisa or Sterzel in view of Sims, Kliegel and Howatt.

Rejection (3)

We now turn our attention to the 35 U.S.C. § 103(a) rejection of claims 15, 28 through 32 and 35 through 37 as unpatentable over Nakamura in view of Davis. Each of independent claims 15, 28 and 37 recites, inter alia, the process steps of injection molding a ceramic article having an outer surface defining a recess and a sprue; molding a plug separate and distinct from the article, the plug having a sidewall or surface configured and dimensioned to substantially fill the recess; forming an article and plug assembly by inserting the plug into the recess; and firing the article and plug assembly to secure the article and the plug together.

The examiner describes Nakamura as teaching a process of forming a ceramic article by injection molding two ceramic components, assembling the components to form an assembly and

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firing the assembly to secure the components together. Davis is cited as evidence that it was known in the art prior to the appellant's invention to assemble two components such that one conceals the molding sprue of the other.

As noted above, all of the rejected claims require the step of firing the article and plug assembly to secure the article and the plug together. The examiner does not suggest that either reference teaches this step. Rather, it is the examiner's position that Davis teaches the concept of concealing a sprue under a product component, that Nakamura teaches bonding two ceramic components by firing and that Davis' concept "could be used in the process of Nakamura to enhance the aesthetics of any product" made thereby. See Answer, p. 16.

As to the examiner's contention that Davis' concept could be used in the process of Nakamura, we must point out the mere fact that the prior art could be modified would not have made the modifications obvious unless the prior art suggested the desirability of the modification. See In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) and In re

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Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Absent the appellant's own disclosure we can think of no reason why one of ordinary skill in the art would have been motivated to mold a ceramic plug separate and distinct from the ceramic article of Nakamura, form an assembly by inserting the plug into a recess formed in the article and fire the assembly to secure the article and plug together. The evidentiary record before us is totally devoid of any suggestion or motivation that would have led one of ordinary skill to make such a modification. The subjective opinion of the examiner as to what would have been obvious, without evidence in support thereof, is not a basis upon which the legal conclusion of obviousness may be reached. Note In re GPAC Inc, 57 F.3d 1573, 1582, 35 USPQ2d 1116, 1123 (Fed. Cir. 1995) and In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

The motivation relied upon by the examiner for combining the teachings of the references to arrive at the appellant's claimed invention comes from the appellant's disclosure rather than from the prior art. Thus, the examiner used

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impermissible hindsight when rejecting the claims. See W.L. Gore & Associates v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984); In re Rothermel, 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960).

For the above reasons, we find that the examiner has not set forth a factual basis which is sufficient to support a conclusion of obviousness of the invention recited in claims 15, 28 and 37.

Accordingly, we will not sustain the standing 35 U.S.C. § 103 rejection of those claims or of claims 29 through 32, 35 and 36, dependent thereon.

CONCLUSION

To summarize, the examiner's decision to reject claims 8 through 14, 39 and 40 under 35 U.S.C. § 103 is affirmed. The examiner's decision to reject claims 15, 28 through 32 and 35 through 37 under 35 U.S.C. § 103 is reversed.

The decision of the examiner is affirmed-in-part.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

IAN A. CALVERT)	
Administrative Patent Judge)	
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CHARLES E. FRANKFORT)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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